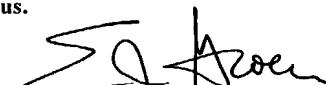


FORM PTO-1390 (Modified) (REV. 11-98)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER <b>KSN0007</b>
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR <b>09/701349</b>
INTERNATIONAL APPLICATION NO <b>PCT/DE99/00918</b>	INTERNATIONAL FILING DATE <b>25 March 1999</b>	PRIORITY DATE CLAIMED <b>28 May 1998</b>		
TITLE OF INVENTION <b>RF CONNECTOR WITH CUTTING EDGES</b>				
APPLICANT(S) FOR DO/EO/US <b>Tom Blomme, Jan Dessein, Marcus, Schulte, Martin Strab, Edgard Acke, Joris Dobbelaere and Bernard Houtteman</b>				
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:				
<ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</li> <li>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c) (2))             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> </li> <li>6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</li> <li>7. <input checked="" type="checkbox"/> A copy of the International Search Report (PCT/ISA/210).</li> <li>8. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input type="checkbox"/> have been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>9. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>10. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)). - unexecuted</li> <li>11. <input checked="" type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409).</li> <li>12. <input checked="" type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).</li> </ol>				
<b>Items 13 to 20 below concern document(s) or information included:</b> <ol style="list-style-type: none"> <li>13. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>14. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>15. <input checked="" type="checkbox"/> A <b>FIRST</b> preliminary amendment.</li> <li>16. <input type="checkbox"/> A <b>SECOND</b> or <b>SUBSEQUENT</b> preliminary amendment.</li> <li>17. <input type="checkbox"/> A substitute specification.</li> <li>18. <input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li>19. <input checked="" type="checkbox"/> Certificate of Mailing by Express Mail</li> <li>20. <input checked="" type="checkbox"/> Other items or information:</li> </ol>				
<b>Check No. 14459 in the amount of \$860.00; 5 Notifications of the Recording of a Change; Return Postcard</b>				

U.S. APPLICATION NO. (IF KNOWN) SEE 37 CFR <b>09/701349</b>	INTERNATIONAL APPLICATION NO. <b>PCT/DE99/00918</b>	ATTORNEY'S DOCKET NUMBER <b>KSN0007</b>																
21. The following fees are submitted:		<b>CALCULATIONS PTO USE ONLY</b>																
<b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :</b>																		
<input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... \$1,000.00 <input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but Internation Search Report prepared by the EPO or JPO ..... \$860.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$710.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$690.00 <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) ..... \$100.00																		
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>		<b>\$860.00</b>																
Surcharge of <b>\$130.00</b> for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492 (e)).		<input type="checkbox"/> 20 <input type="checkbox"/> 30 <b>\$0.00</b>																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">CLAIMS</th> <th style="width: 25%;">NUMBER FILED</th> <th style="width: 25%;">NUMBER EXTRA</th> <th style="width: 25%;">RATE</th> </tr> </thead> <tbody> <tr> <td>Total claims</td> <td>14 - 20 =</td> <td>0</td> <td>x \$18.00</td> </tr> <tr> <td>Independent claims</td> <td>2 - 3 =</td> <td>0</td> <td>x \$80.00</td> </tr> <tr> <td colspan="2">Multiple Dependent Claims (check if applicable).</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><b>\$0.00</b></td> </tr> </tbody> </table>		CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	Total claims	14 - 20 =	0	x \$18.00	Independent claims	2 - 3 =	0	x \$80.00	Multiple Dependent Claims (check if applicable).		<input type="checkbox"/>	<b>\$0.00</b>	
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Independent claims	2 - 3 =	0	x \$80.00															
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Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable).		<input type="checkbox"/> <b>\$0.00</b>																
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Processing fee of <b>\$130.00</b> for furnishing the English translation later than months from the earliest claimed priority date (37 CFR 1.492 (f)).		<input type="checkbox"/> 20 <input type="checkbox"/> 30      + <b>\$0.00</b>																
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Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable).		<input type="checkbox"/> <b>\$0.00</b>																
<b>TOTAL FEES ENCLOSED =</b>		<b>\$860.00</b>																
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<p><input checked="" type="checkbox"/> A check in the amount of <b>\$860.00</b> to cover the above fees is enclosed.</p> <p><input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees. A duplicate copy of this sheet is enclosed.</p> <p><input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. <b>02-0387</b> A duplicate copy of this sheet is enclosed.</p>																		
<p><b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.</b></p> <p>SEND ALL CORRESPONDENCE TO:</p> <p><b>Eric J. Groen Baker &amp; Daniels 205 W. Jefferson Blvd. Suite 250 South Bend, IN 46601</b></p> <p><b>Tel. (219) 234-4149 Fax (219) 239-1900</b></p>																		
 SIGNATURE <b>Eric J. Groen</b> NAME <b>32,230</b> REGISTRATION NUMBER <b>November 28, 2000</b> DATE																		

09/701349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

525 Rec'd PCT/PTO 28NOV2000

In re application of: )  
Tom Blomme et al. )  
Serial No. )  
Filed: PCT/DE99/00918 March 25, 1999 )  
For: RF CONNECTOR WITH CUTTING EDGES )  
)

Commissioner for Patents and Trademarks  
Washington DC 20231

Dear Sir:

**PRELIMINARY AMENDMENT**

In the above-mentioned PCT application, please accept the enclosed application under the national stage pursuant to 35 USC § 371 and amend the application as follows:

**In the Specification:**

On Page 6, line 25, after "conductor 8" add - "As also shown in Figure 5, the edges 2 have side faces 15 generally aligned along a vertical axis Y which forms a cable receiving area 16."

**In the Drawings:**

Please find attached a marked up copy of Figure 5 which applicants wish to replace the original PCT drawing.

**In the Claims:**

Delete present claims 1-6 and replace with new claims 1-6, as follows:

1. A connector for RF coaxial lines comprising two connector halves for establishing contact with the outer conductor of the RF coaxial line by means of an insulation displacement connection with at least one cutting edge arranged on each connector half, the cutting edges being arranged opposite each other in staggered manner in the longitudinal axial direction of the outer conductor and, after penetration of the outer insulation of the RF coaxial line, establish a cold-welding type connection with the outer conductor on the end face and at least one adjacent side face thereof, and the cutting edges, in case of a change in distance of their end faces with respect to each other, slide on the outer conductor without a gap being formed between outer conductor and cutting edges.
2. The connector of claim 1, wherein the connector has a plurality of pairs of cutting edges arranged symmetrically with respect to a plane extending perpendicularly to the longitudinal axial direction of the outer conductor.
3. The connector of claim 1, wherein the connector has a plurality of pairs of cutting edges which are arranged symmetrically with respect to a plane extending along the longitudinal axial direction of the outer conductor and which, in case of a change in distance of their end faces with respect to each other, slide on the outer conductor without a gap being formed between outer conductor and cutting edges.
4. The connector of claim 1, wherein a base plate formed on its longitudinal side with lugs extending substantially perpendicularly thereto, with one cutting edge pair each being arranged substantially perpendicularly thereto and extending away therefrom towards the outer conductor.
5. The connector of claim 4, wherein at least two lugs each on both longitudinal sides of the base plate, said lugs having cutting edge pairs with different axial distances of the cutting edges.
6. The connector of claim 4, wherein two connector halves are arranged on the RF line, with the cutting edge pairs overlapping each other.

Add new claims 7-14 as follows:

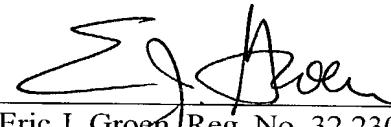
7. An electrical contact for making connection to a coaxial cable outer conductor, where the coaxial cable is comprised of an inner signal conductor, an inner core surrounding the signal conductor, conductive shielding surrounding the inner core and outer insulation surrounding the inner core, the contact comprising at least one upstanding side edge portion formed by first and second portions, said first and second portions have side faces generally aligned along a vertical axis, and further comprising end faces which are axially staggered in the axial direction of the cable, the side faces being profiled for cutting through the outer insulation and the end faces trapping the conductive shielding therebetween.
8. The electrical contact of claim 7, wherein said first and second portions are defined as cutting walls which extend in general transverse relation to said axial direction.
9. The electrical contact of claim 8, wherein a second upstanding side edge portion extends on an opposite side, forming opposed side edge portions, having parallel side faces extending along parallel vertical axes.
10. The electrical contact of claim 9, wherein a plurality of opposed side edge portions generally extend along axial lengths of said contact.
11. The electrical contact of claim 7, wherein the contact is generally rectangular in cross-section.
12. The electrical contact of claim 11, wherein said at least one side edge portion is positioned on at least end of said contact.
13. The electrical contact of claim 12, wherein said at least one side edge portion is at both ends of said contact.

14. The electrical contact of claim 13, wherein said contact is defined by at least two lugs axially spaced apart, wherein said side edge portions extend from said lugs.

**REMARKS**

Applicants respectfully request that the above preliminary amendment be entered, and that the fees due herewith are calculated using the new claims, not the claims of the PCT application.

Respectfully submitted,



Eric J. Groen, Reg. No. 32,230

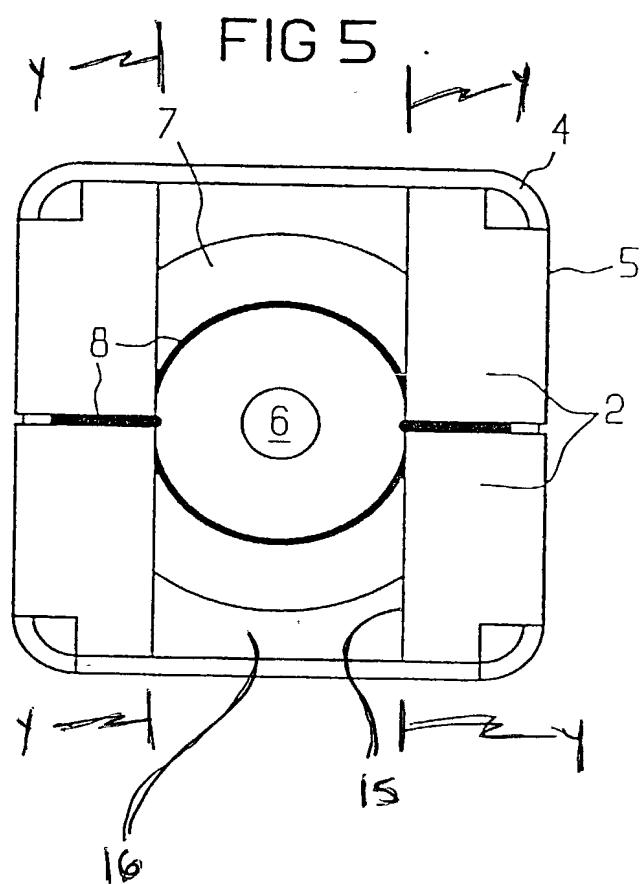
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205 West Jefferson Blvd., Suite 250

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(219) 234-4149

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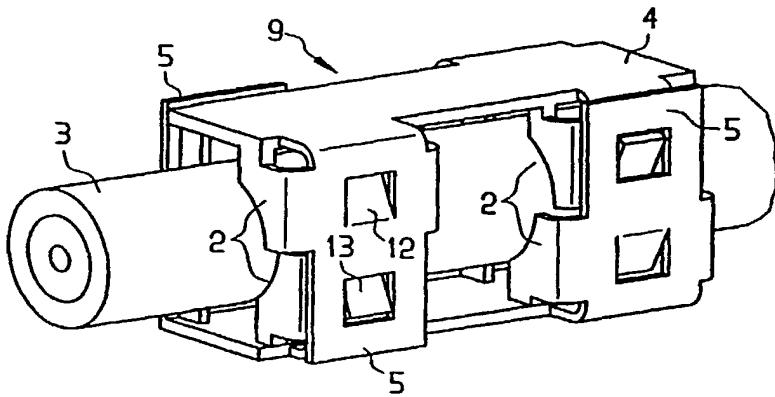


INTERNATIONALE ANMELDUNG VERÖFFENTLICHT NACH DEM VERTRAG ÜBER DIE  
INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT)

(51) Internationale Patentklassifikation <sup>6</sup> :	A1	(11) Internationale Veröffentlichungsnummer: WO 99/62141
H01R 4/24, 9/05		(43) Internationales Veröffentlichungsdatum: 2. Dezember 1999 (02.12.99)
(21) Internationales Aktenzeichen:	PCT/DE99/00918	(81) Bestimmungsstaaten: JP, KR, US, europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).
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(71) Anmelder ( <i>für alle Bestimmungsstaaten ausser US</i> ): SIEMENS AKTIENGESELLSCHAFT [DE/DE]; Wittelsbacherplatz 2, D-80333 München (DE).		
(72) Erfinder; und		
(75) Erfinder/Anmelder ( <i>nur für US</i> ): BLOMME, Tom [BE/BE]; Vrije 46, B-8560 Moorslede (BE). DESSIN, Jan [BE/BE]; Meeuwenlaan 14, B-8370 Blankenberge (BE). SCHULTE, Marcus [DE/DE]; Strassbergerstrasse 22, D-80809 München (DE). STRÄB, Martin [DE/DE]; Bannzeile 16, D-86911 Dießen (DE). ACKE, Edgard [BE/BE]; Splethagestrasse 41, B-8020 Oostkamp (BE). DOBBELAERE, Joris [BE/BE]; Wellingstrasse 59 B, B-8030 Beernem (BE). HOUTEMANN, Bernard [BE/BE]; Azaleastrasse 10, B-8020 Oostkamp (BE).		
(74) Gemeinsamer Vertreter:	SIEMENS AKTIENGESELLSCHAFT; Postfach 22 16 34, D-80506 München (DE).	

(54) Title: HF CONNECTOR WITH CUTTING EDGES

(54) Bezeichnung: HF-STECKVERBINDER MIT VERSETZTEN SCHNEIDEN



(57) Abstract

The invention relates to a connector for HF lines for contacting the outer conductor (8) of the HF line (3) by means of an insulation displacement connector having at least one pair of opposite cutting edges (2), whereby the opposite cutting edges (2) are staggered in the longitudinal axial direction of the outer conductor (8).

(57) Zusammenfassung

Es ist ein Steckverbinder für HF-Leitungen zur Kontaktierung des Außenleiters (8) der HF-Leitung (3) mittels einer Schneidklemmverbindung mit mindestens einem Paar gegenüberliegender Schneiden (2) vorgesehen, bei dem die Schneiden (2) einander gegenüberliegend in Axiallängsrichtung des Außenleiters (8) versetzt angeordnet sind.

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### **Specification**

#### **RF Connector with Staggered Cutting Edges**

The present invention relates to a connector for RF lines according to the generic clause of claim 1.

Connectors of the insulation displacement type are known which establish contact with a conductor via cutting edges, for example for tapping a signal from the conductor or for connecting two conductors to each other via such a connector. Such known connectors are used in all situations where it is necessary to provide an inexpensive solution for establishing an electrically conductive connection between connector and conductor.

With such a type of connection, cutting edges of metal quite generally penetrate the shield of the line until the cutting edges establish contact with the conductor. In this manner it is possible, for example, to establish an electrically conducting connection between two lines whose shields are penetrated by the cutting edges of the connector so that the two conductors are in electrical contact via the cutting edges.

Such connectors making use of the insulation displacement technique have proven efficient as they can be manufactured inexpensively, can rapidly be contacted with a conductor and moreover as a rule establish good electrical contact.

There has also become known a connector for RF lines in which a cutting edge pair is arranged such that the end faces of the two cutting edges are located exactly opposite each other, i.e. the cutting edge pair is disposed in one plane with respect to the RF line. Such RF lines are

employed in cases in which large amounts of data or signals are to be transferred, resulting in correspondingly high frequencies on the conductor.

A possible field of application for such RF lines is also automotive engineering in which large data quantities and wave signals are to be transferred for audio systems and multimedia applications from the fields of communication or navigation.

Due to the forces originating on the basis of the dynamics of the vehicle movement of a motor vehicle from vibrations and shocks, such a connector also is exposed to corresponding forces resulting in release of the contact between the cutting edges and the conductor. This danger of release of the connection between the cutting edges and the conductor still is increased considerably due to the high temperature fluctuations which often occur in motor vehicles, as these temperature fluctuations result in different degrees of expansion of the cutting edges and the conductor.

For example, due to differing coefficients of expansion of the conductor and the cutting edges, displacement of the cutting edges with respect to the conductor may occur, thereby changing the transition resistance and thus causing different potentials or erroneous contacting. The signal tapped from the conductor is distorted.

For eliminating the disadvantages outlined, it is thus the object of the invention to provide a connector which, while basically maintaining the utilization of the insulation displacement technique, permits unaltered contacting with the conductor also in case of temperature fluctuations and vibrations.

This object is met by the invention by the features indicated in claim 1. Advantageous development thereof are described in the further claims.

The present invention is based on the realization that the insulation displacement type connection between the cutting edges and the conductor establishes a cold-welding type connection and that this connection is disturbed in case of relative motion between the cutting edges and the conductor due to the thus arising gap between the cutting edges and the conductor. There is formed an air gap that changes the electrical resistance at the contact location between the cutting edges and the conductor. There are potential differences arising at the contact location.

According to the invention, a connector for RF lines, for establishing contact with the outer conductor of the RF line by way of an insulation displacement connection, is provided with at least one pair of opposite cutting edges, with the cutting edges being arranged opposite each other in staggered manner in the longitudinal axial direction of the outer conductor. The RF line preferably is a coaxial cable.

The expression concerning the opposite and staggered arrangement of the cutting edges, in the sense of the invention, is to be understood to the effect that the cutting edges indeed are basically located opposite each other at the RF line, but that the cutting edges, contrary to the known connector, are not arranged end face on end face, but rather one after the other as seen in the longitudinal axial direction of the conductor, i.e. in spaced apart manner.

The effect achieved by this design is that the cutting edges, after penetration of the outer insulation of the RF line, establish a cold-welding type connection with

the outer conductor on the end face and at least one adjacent side face. The contact-establishing area between the cutting edges and the outer conductor is considerably increased thereby.

It is provided according to a further development of the invention that the connector has a plurality of cutting edge pairs arranged symmetrically with respect to a plane extending perpendicularly to the longitudinal axial direction of the outer conductor. The effect achieved hereby is that, when establishing the insulation displacement type connection, the RF line between the cutting edges of the connector is not acted upon by a tensile force extending in the longitudinal axial direction of the outer conductor and resulting in a shear effect of the line, but rather is slightly upset between the cutting edges.

The connector may have a plurality of cutting edge pairs arranged symmetrically with respect to a plane extending along the longitudinal axial direction of the outer conductor, such that a design of the connector that is mirror-symmetrical with respect to both planes is rendered possible so that only one half of the connector has to be manufactured and two halves thereof can be mated with each other via the cutting edges in order to thus establish the connector.

The increased contact area between the cutting edges and the conductor has the effect that the cutting edges, in case of a change in distance of their end faces with respect to each other, slide on the outer conductor without a gap being formed between outer conductor and cutting edges, as the sliding area is formed largely by the lateral area of the respective cutting edge.

The invention will be elucidated in the following by way of the drawings in which

Fig. 1 shows a perspective view of a conventional connector;

Fig. 2 shows a schematic side view of the connector of Fig. 1;

Fig. 3 shows a perspective view of a connector according to the invention;

Fig. 4 shows a schematic side view of the connector of Fig. 3; and

Fig. 5 shows a front view illustrating the manner in which the outer conductor is clamped between the cutting edges of the connector.

Fig. 1 and Fig 2 of the drawings illustrate a known connector 1 having cutting edges 2 arranged in confronting manner on the face sides thereof.

The connector 1 comprises a largely rectangular base plate 4 having respective lugs 5 formed on the longitudinal sides thereof, such that connector 1 has a U-shaped configuration as seen in front view. Both legs of the thus formed U-shaped arrangement are constituted by said lugs 5 which enclose the RF line 3.

As can be seen more clearly by way of drawing Fig. 2, the cutting edges 2 of connector 1 extend in one plane each, so that the outer conductor 8 clamped between the cutting edges 2 is gripped only by the respective end faces of cutting edges 2, so that, for example, in case of a change in distance between the cutting edges 2 due to temperature fluctuations, a gap is formed in the contact area between the cutting edges 2 and the outer conductor 8, with potential differences or erroneous contacting being the result thereof.

Figs. 3 and 4 of the drawings illustrate a connector 9 according to the invention, which is formed largely similar to the known connector 1 and thus has the advantage that it can be clampingly engaged using already existing tools.

A significant difference between the known connector according to Fig. 1 and Fig. 2 and the inventive connector 9 according to Fig. 3 and Fig. 4, however, resides in that - as clearly visible from Fig. 4 - the cutting edges 2 are not arranged with their end faces in confronting manner on top of each other, but rather extend in staggered manner in the longitudinal axial direction of the conductor 3.

From the base plate 4 of connector 9, there are extending lugs 5 for establishing a largely U-shaped configuration of connector 9, said lugs 5 enclosing the RF line 3. The cutting edges 2 are extending from the lugs 5 in an angle substantially perpendicular to the longitudinal axial direction of conductor 3 in the direction towards the inner conductor 6 (cf. Fig. 5) and in doing so penetrate the outer insulation 7 of conductor 3 and are clampingly and squeezingly engaged with the outer conductor 8.

As can be seen more clearly from Fig. 4, the axially staggered arrangement of the cutting edges 2 does not only result in contact between the respective end faces 10 of cutting edges 2 and the outer conductor 8, but also in face-to-face contact between the side faces 11 of the cutting edges 2 and the outer conductor 8.

This face-to-face contact has the effect that also in case of a change in distance between cutting edges 2 with respect to each other, there is no gap formed in the region of the contact area, but rather, the cutting edges 2 slide on outer conductor 8, which in case of a

coaxial cable consists of the shielding braid, and thus there is no change caused in the transition resistance.

As can easily be seen in addition from Fig. 3, connector 9, on the longitudinal sides of its base plate 4, has two lugs 5 each which have cutting edge pairs with different axial distances a, b of the cutting edges 2.

Connector 9 can be assembled from two halves, with one half made from a sheet metal member being assembled with another such half to form connector 9 by arranging the cutting edge pairs in mutually overlapping manner. To this end, the lugs 5 are provided with receiving means 12 adapted to be lockingly engaged by locking noses 13 of the respective other connector half. This construction is particularly advantageous in terms the requirement of an inexpensive design for mass production.

The described embodiment according to the present invention serves for elucidation, but not for restriction. Accordingly, the invention can be implemented in the form of other embodiments without leaving the scope of the invention.

The invention has been described by way of an embodiment for connecting two coaxial lines. The scope of the invention of course comprises also an embodiment in which a plug (socket or pin plug) having the cutting edge arrangement according to the invention is connected to the conductor.

Furthermore, as regards features not elucidated in more detail hereinbefore, it is expressly referred to the claims and the drawings.

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**Translation of Annex to the IPER**

**Patent Claims**

1. A connector for RF coaxial lines comprising two connector halves for establishing contact with the outer conductor (8) of the RF coaxial line (3) by means of an insulation displacement connection with at least one cutting edge (2) arranged on each connector half, characterized in that the cutting edges (2) are arranged opposite each other in staggered manner in the longitudinal axial direction of the outer conductor (8) and, after penetration of the outer insulation (7) of the RF coaxial line (3), establish a cold-welding type connection with the outer conductor (8) on the end face (10) and at least one adjacent side face (11) thereof, and the cutting edges, in case of a change in distance of their end faces (10) with respect to each other, slide on the outer conductor (8) without a gap being formed between outer conductor (8) and cutting edges (2).
2. The connector of claim 1, characterized in that the connector (9) has a plurality of pairs of cutting edges (2) arranged symmetrically with respect to a plane extending perpendicularly to the longitudinal axial direction of the outer conductor (8).
3. The connector of claim 1 or 2, characterized in that the connector (9) has a plurality of pairs of cutting edges (2) which are arranged symmetrically with respect to a plane extending along the longitudinal axial direction of the outer conductor (8) and which, in case of a change in distance of their end

faces (10) with respect to each other, slide on the outer conductor (8) without a gap being formed between outer conductor (8) and cutting edges (2).

4. The connector of any of claims 1 to 3, characterized by a base plate (4) formed on its longitudinal side with lugs (5) extending substantially perpendicularly thereto, with one cutting edge pair each being arranged substantially perpendicularly thereto and extending away therefrom towards the outer conductor (8).
5. The connector of claim 4, characterized by at least two lugs (5) each on both longitudinal sides of the base plate (4), said lugs (5) having cutting edge pairs with different axial distances (a, b) of the cutting edges (2).
6. The connector of claim 4 or 5, characterized in that two connector halves are arranged on the RF line (3), with the cutting edge pairs overlapping each other.

**Abstract**

The invention relates to a connector for RF lines for contacting the outer conductor (8) of the RF line (3) by means of an insulation displacement connector having at least one pair of opposite cutting edges (2), with the cutting edges (2) being arranged opposite each other in staggered manner in the longitudinal axial direction of the outer conductor (8).

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WO 99/62141

PCT/DE99/00918

1/3

FIG 1

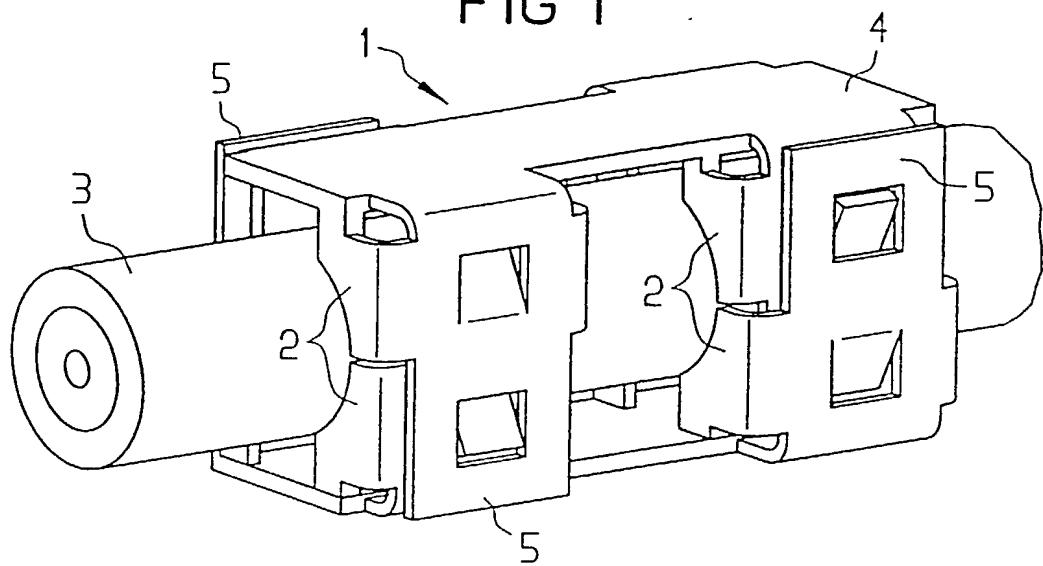
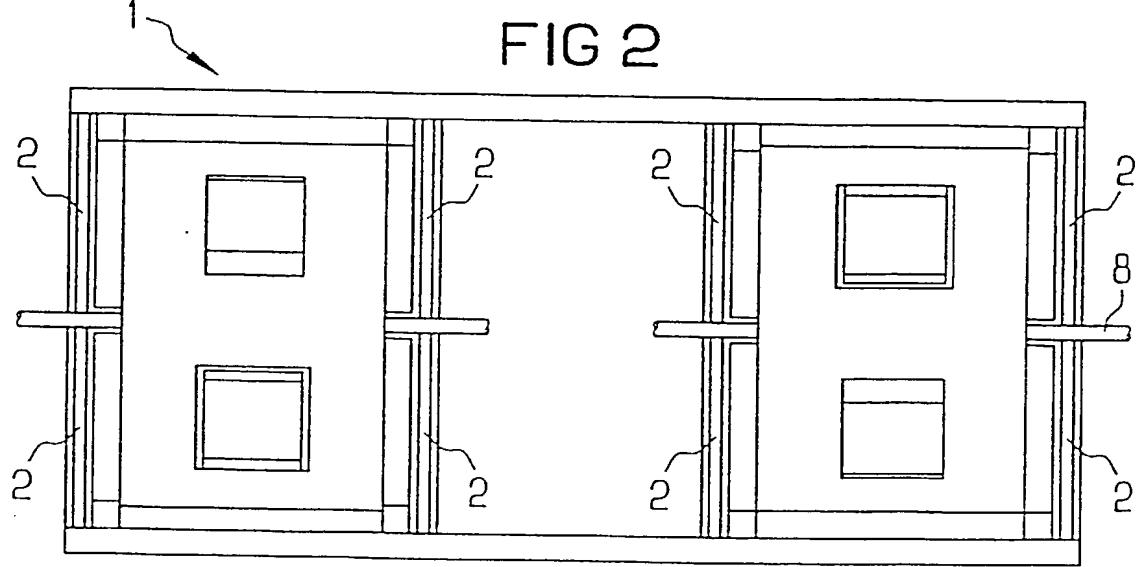


FIG 2



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FIG 3

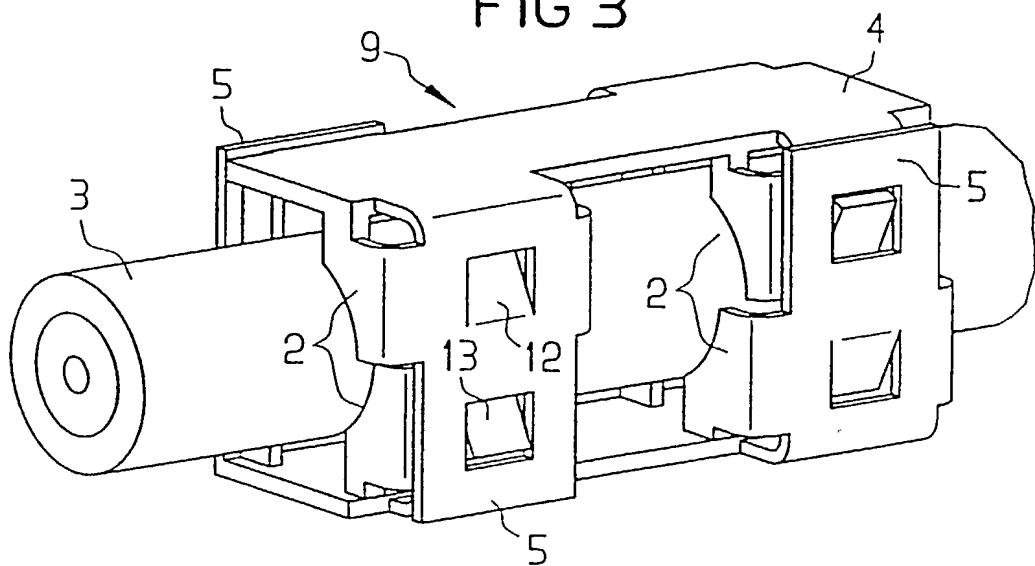
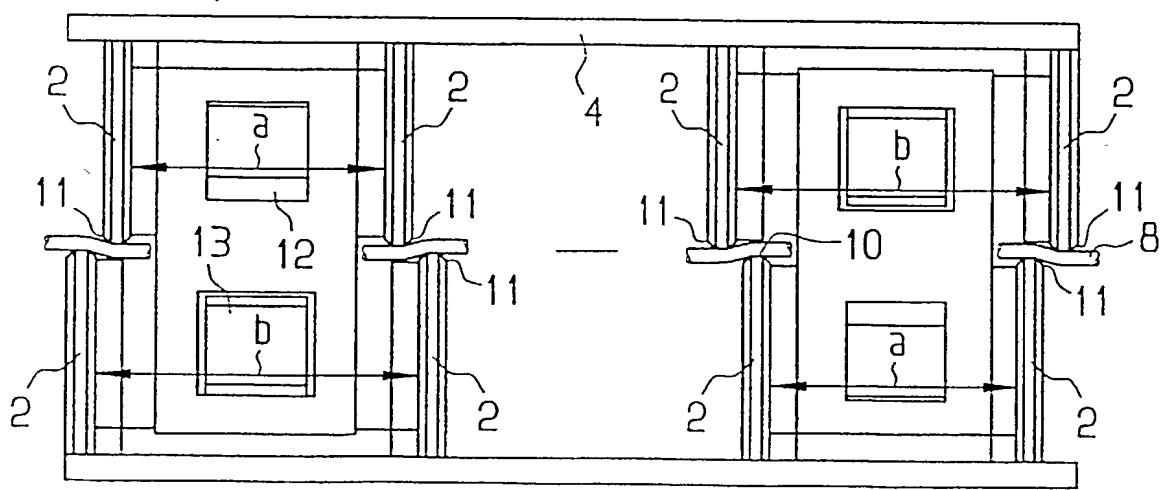


FIG 4



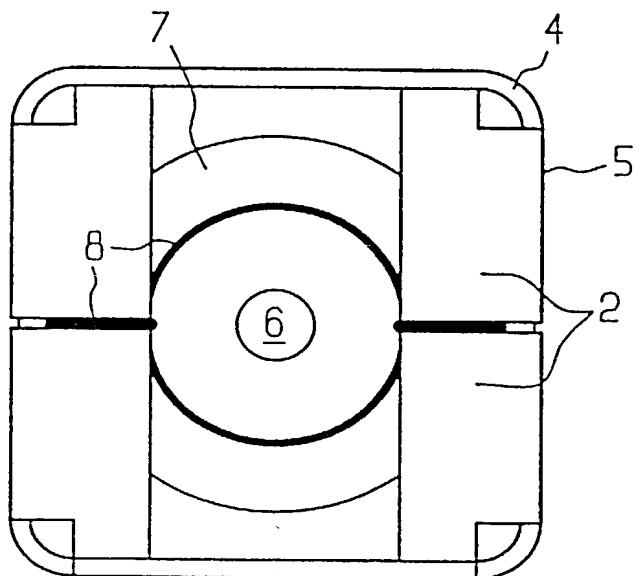
09/701349

WO 99/62141

PCT/DE99/00918

3/3

FIG 5



Fax am Mision H. Schäfer  
+ 41 71 4470495

Docket No  
**KSN0007**

## **Declaration and Power of Attorney For Patent Application**

### **English Language Declaration**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

the specification of which

(check one)

is attached hereto.

was filed on November 28, 2000 as United States Application No. or PCT International

Application Number 09/701,349

and was amended on November 28, 2000 by Preliminary Amendment

(if applicable)

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#### Prior Foreign Application(s)

#### Priority Not Claimed

<u>198 23 957.2</u> (Number)	<u>Germany</u> (Country)	<u>28 May 1998</u> (Day/Month/Year Filed)	<input type="checkbox"/>
<u></u> (Number)	<u></u> (Country)	<u></u> (Day/Month/Year Filed)	<input type="checkbox"/>
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PCT/DE99/00918	25 March 1999	pending
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
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Daniel Tychonievich, 41,358

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Baker & Daniels  
205 West Jefferson Blvd., Suite 250  
South Bend, IN 46601

**Direct Telephone Calls to:** (name and telephone number)  
**Eric J. Groen (574) 234-4149**

Full name of sole or first Inventor <u>Jan Desselin</u>	Sole or first inventor's signature 	Date <u>18/03/02</u>
Residence Meeuwenlaan 14, B-8370 Blankerberge, Belgium	<input checked="" type="checkbox"/> BE	
Citizenship BE		
Post Office Address Meeuwenlaan 14, B-8370 Blankerberge, Belgium		

Full name of second inventor, if any <b>Marcus Schulte</b>	Date
Second inventor's signature	
Residence <b>Am Centgericht 4, 64646 Heppenheim, Germany</b>	
Citizenship	
Post Office Address <b>Am Centgericht 4, 64646 Heppenheim, Germany</b>	

Full name of third inventor, if any <b>Martin Straub</b>	Date
Third inventor's signature	
Residence <b>Ottmarshauserstrasse 12 E, D-86356 Neusaess, Germany</b>	
Citizenship <b>DE</b>	
Post Office Address <b>Ottmarshauserstrasse 12 E, D-86356 Neusaess, Germany</b>	

4 -	Full name of fourth inventor, if any <b>Edgard Acke</b>	Date
	Fourth inventor's signature <i>Edgard Acke</i>	<b>19.02.02</b>
	Residence <b>Splethagestrasse 41, B-8020 Oostkamp, Belgium</b>	
	Citizenship <b>BE</b>	
	Post Office Address <b>Splethagestrasse 41, B-8020 Oostkamp, Belgium</b>	

Full name of fifth inventor, if any <b>Joris Dobbelaere</b>	Date	
Fifth inventor's signature		
Residence <b>Wellingstrasse 59 B, B-8030 Beernem, Belgium</b>		
Citizenship <b>BE</b>		
Post Office Address <b>Wellingstrasse 59 B, B-8030 Beernem, Belgium</b>		

Full name of sixth inventor, if any <b>Bernard Houtteman</b>	Date	
Sixth inventor's signature		
Residence <b>Azaleastrasse 10, B-8020 Oostkamp, Belgium</b>		
Citizenship <b>BE</b>		
Post Office Address <b>Azaleastrasse 10, B-8020 Oostkamp, Belgium</b>		

Full name of seventh inventor, if any <b>Tom Blomme</b>	
Seventh inventor's signature	Date
Residence <b>T Vrije 46, B-8560 Moorsele, Belgium</b>	
Citizenship <b>BE</b>	
Post Office Address <b>T Vrige 46 Moorsele, Belgium</b>	

Full name of eighth inventor, if	
Eighth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of ninth inventor, if any	
Ninth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of tenth inventor, if any	
Tenth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Docket No.  
KSN0007

# Declaration and Power of Attorney For Patent Application

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<u>                  </u> (Number)	<u>                  </u> (Country)	<u>                  </u> (Day/Month/Year Filed)	<input type="checkbox"/>
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<u>PCT/DE99/00918</u>	<u>25 March 1999</u>	<u>pending</u>
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
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 Baker & Daniels  
 205 West Jefferson Blvd., Suite 250  
 South Bend, IN 46601

**Direct Telephone Calls to:** (name and telephone number)  
**Eric J. Groen (574) 234-4149**

Full name of sole or first inventor <b>Jan Dessein</b>	Sole or first inventor's signature	Date
Residence <b>Meeuwenlaan 14, B-8370 Blankerberge, Belgium</b>		
Citizenship <b>BE</b>		
Post Office Address <b>Meeuwenlaan 14, B-8370 Blankerberge, Belgium</b>		

2 - 00	Full name of second inventor, if any <b>Marcus Schulte</b>	Second inventor's signature <i>Marcus Schulte</i>	Date <i>20<sup>th</sup> Feb 2002</i>
	Residence <b>Am Centgericht 4, 64646 Heppenheim, Germany</b>	<b>DEX</b>	
	Citizenship <b>DE</b>		
	Post Office Address <b>Am Centgericht 4, 64646 Heppenheim, Germany</b>		

Full name of third inventor, if any <b>Martin Strab</b>	
Third inventor's signature	Date
Residence <b>Ottmarshauserstrasse 12 E, D-86356 Neusaess, Germany</b>	
Citizenship <b>DE</b>	
Post Office Address <b>Ottmarshauserstrasse 12 E, D-86356 Neusaess, Germany</b>	

Full name of fourth inventor, if any <b>Edgard Acke</b>	
Fourth inventor's signature	Date
Residence <b>Splethagestrasse 41, B-8020 Oostkamp, Belgium</b>	
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Sixth inventor's signature	Date
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Citizenship <b>BE</b>	
Post Office Address <b>Azaleastrasse 10, B-8020 Oostkamp, Belgium</b>	

Full name of seventh inventor, if any <b>Tom Blomme</b>	Seventh inventor's signature	Date
Residence <b>T Vrije 46, B-8560 Moorsele, Belgium</b>		
Citizenship <b>BE</b>		
Post Office Address <b>T Vrije 46 Moorsele, Belgium</b>		

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Eighth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of ninth inventor, if any	
Ninth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of tenth inventor, if any	
Tenth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Docket No.  
KSN0007**Declaration and Power of Attorney For Patent Application****English Language Declaration**

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PCT/DE99/00918

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Citizenship <b>BE</b>		
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Citizenship		
Post Office Address <b>Am Centgericht 4, 64646 Heppenheim, Germany</b>		

Full name of third inventor, if any <b>Martin Strab</b>	Third inventor's signature <i>Martin Strab</i>	Date <b>26.02.02</b>
Residence <b>Ottmarshauserstrasse 12 E, D-86356 Neusaess, Germany</b>	<b>DEX</b>	
Citizenship <b>DE</b>		
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Fourth inventor's signature	Date
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Fifth inventor's signature	Date
Residence <b>Wellingstrasse 59 B, B-8030 Beernem, Belgium</b>	
Citizenship <b>BE</b>	
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Sixth inventor's signature	Date
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Citizenship <b>BE</b>	
Post Office Address <b>Azaleastrasse 10, B-8020 Oostkamp, Belgium</b>	

Full name of seventh inventor, if any <b>Tom Blomme</b>	Date
Seventh inventor's signature	Date
Residence <b>T Vrije 46, B-8560 Moorsele, Belgium</b>	
Citizenship <b>BE</b>	
Post Office Address <b>T Vrige 46 Moorsele, Belgium</b>	

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Eighth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of ninth inventor, if any	
Ninth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of tenth inventor, if any	
Tenth inventor's signature	Date
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PCT/DE99/00918

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**pending**

(Application Serial No.)

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**(Status)**

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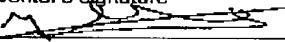
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Full name of sole or first inventor <b>Jan Dessen</b>	Date
Sole or first inventor's signature	
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Fourth inventor's signature	
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Citizenship <b>BE</b>	
Post Office Address <b>Splethagestrasse 41, B-8020 Oostkamp, Belgium</b>	

Full name of fifth inventor, if any <b>Joris Dobbelaere</b>	Date
Fifth inventor's signature 	<u>21/2/2002</u>
Residence <b>Wellingstrasse 59 B, B-8030 Beernem, Belgium BEX</b>	
Citizenship <b>BE</b>	
Post Office Address <b>Wellingstrasse 59 B, B-8030 Beernem, Belgium</b>	

Full name of sixth inventor, if any <b>Bernard Houtteman</b>	Date
Sixth inventor's signature	
Residence <b>Azaleastrasse 10, B-8020 Oostkamp, Belgium</b>	
Citizenship <b>BE</b>	
Post Office Address <b>Azaleastrasse 10, B-8020 Oostkamp, Belgium</b>	

Full name of seventh inventor, if any <b>Tom Blomme</b>	Date
Seventh inventor's signature	Date
Residence <b>T Vrije 46, B-8560 Moorsele, Belgium</b>	
Citizenship <b>BE</b>	
Post Office Address <b>T Vrige 46 Moorsele, Belgium</b>	

Full name of eighth inventor, if any	
Eighth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of ninth inventor, if any	
Ninth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of tenth inventor, if any	
Tenth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Docket No.  
KSN0007

## Declaration and Power of Attorney For Patent Application

### English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

the specification of which

(check one)

is attached hereto.

was filed on November 28, 2000 as United States Application No. or PCT International Application Number 09/701,349

and was amended on November 28, 2000 by Preliminary Amendment

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

#### Prior Foreign Application(s)

Priority Not Claimed

<u>198 23 957.2</u> (Number)	<u>Germany</u> (Country)	<u>28 May 1998</u> (Day/Month/Year Filed)	<input type="checkbox"/>
<u></u> (Number)	<u></u> (Country)	<u></u> (Day/Month/Year Filed)	<input type="checkbox"/>
<u></u> (Number)	<u></u> (Country)	<u></u> (Day/Month/Year Filed)	<input type="checkbox"/>

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

PCT/DE99/00918 (Application Serial No.)	25 March 1999 (Filing Date)	pending (Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

Eric J. Groen, 32,230  
 Gerard T. Gallagher, 39,679  
 Daniel Tychonievich, 41,358  
 Kevin R. Erdman, 33,687  
 John F. Hoffman, 26,280  
 Anthony Niewyk, 24,871  
 Nancy G. Tinsley, 37,098  
 Arthur R. Whale, 18,778

**Send Correspondence to:** Eric J. Groen  
 Baker & Daniels  
 205 West Jefferson Blvd., Suite 250  
 South Bend, IN 46601

**Direct Telephone Calls to:** (name and telephone number)  
**Eric J. Groen (574) 234-4149**

Full name of sole or first inventor <b>Jan Dessein</b>	Sole or first inventor's signature	Date
Residence <b>Meeuwenlaan 14, B-8370 Blankerberge, Belgium</b>		
Citizenship <b>BE</b>		
Post Office Address <b>Meeuwenlaan 14, B-8370 Blankerberge, Belgium</b>		

Full name of second inventor, if any <b>Marcus Schulte</b>	Second inventor's signature	Date
Residence <b>Am Centgericht 4, 64646 Heppenheim, Germany</b>		
Citizenship		
Post Office Address <b>Am Centgericht 4, 64646 Heppenheim, Germany</b>		

<b>Full name of third inventor, if any</b>	
<b>Martin Strab</b>	
<b>Third inventor's signature</b>	<b>Date</b>
<b>Residence</b>	
<b>Ottmarshauserstrasse 12 E, D-86356 Neusaess, Germany</b>	
<b>Citizenship</b>	
<b>DE</b>	
<b>Post Office Address</b>	
<b>Ottmarshauserstrasse 12 E, D-86356 Neusaess, Germany</b>	

<b>Full name of fourth inventor, if any</b>	
<b>Edgard Acke</b>	
<b>Fourth inventor's signature</b>	<b>Date</b>
<b>Residence</b>	
<b>Splethagestrasse 41, B-8020 Oostkamp, Belgium</b>	
<b>Citizenship</b>	
<b>BE</b>	
<b>Post Office Address</b>	
<b>Splethagestrasse 41, B-8020 Oostkamp, Belgium</b>	

<b>Full name of fifth inventor, if any</b>	
<b>Joris Dohbelaere</b>	
<b>Fifth inventor's signature</b>	<b>Date</b>
<b>Residence</b>	
<b>Wellingstrasse 59 B, B-8030 Beernem, Belgium</b>	
<b>Citizenship</b>	
<b>BE</b>	
<b>Post Office Address</b>	
<b>Wellingstrasse 59 B, B-8030 Beernem, Belgium</b>	

<b>Full name of sixth inventor, if any</b>	
<b>Bernard Houtteman</b>	
<b>Sixth inventor's signature</b>	<b>Date</b>
<i>Bernard Houtteman</i>	
<b>Residence</b>	
<b>Azaleastrasse 10, B-8020 Oostkamp, Belgium BEX</b>	
<b>Citizenship</b>	
<b>BE</b>	
<b>Post Office Address</b>	
<b>Azaleastrasse 10, B-8020 Oostkamp, Belgium</b>	

7-00	Full name of seventh inventor, if any <b>Tom Blomme</b>	
	Seventh inventor's signature	Date
	Residence <b>T Vrije 46, B-8560 Moorsele, Belgium</b>	
	Citizenship <b>BE</b>	
	Post Office Address <b>T Vrije 46 Moorsele, Belgium</b>	

Full name of eighth inventor, if any	
Eighth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of ninth inventor, if any	
Ninth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	

Full name of tenth inventor, if any	
Tenth inventor's signature	Date
Residence	
Citizenship	
Post Office Address	